WE CLAIM:

1. A method for transmitting data within a communication system, the communication system comprising a communication media and a number of nodes connected to the communication media, the method comprising the step of:

transmitting the data across the communication media within a communication cycle comprising a number of time slots assigned to one or more nodes of the communication system, wherein said communication cycle is initiated by an event.

2. The method of claim 1, wherein said event is external.

3. The method of claim 1, wherein said event is internal.

4. The method of claim 1, wherein one of the nodes of the communication system is defined as a master node which initiates said communication cycle in conjunction with a predetermined trigger signal.

5. The method of claim 4, wherein said master node receives said trigger signal.

6. The method of claim 4, wherein said master node generates said trigger signal.

7. The method of claim 4, wherein execution of said communication cycle is suspended until said master node receives said trigger signal.

8. The method of claim 4, wherein execution of said communication cycle is suspended until said master node generates said trigger signal.

9. The method of claim 4, wherein execution of said communication cycle is suspended until a predetermined period of time has elapsed.

10. The method of claim 4, wherein said master node issues an event indication signal (EIS) upon receipt or generation of said trigger signal, the other nodes of the communication system being defined as slave nodes which receive said event indication signal and which resume execution of said communication cycle upon reception of said event indication signal.

11. The method of claim 10, wherein said communication cycle comprises a cycle gap into which said nodes enter to suspend execution of said communication cycle, wherein said master node issues said event indication signal and said slave nodes receive said event indication signal to resume execution of said communication cycle.

12. The method of claim 10, wherein said event indication signal is used for synchronizing said slave nodes.

13. The method of claim 12, wherein said event indication signal is defined as a low/high/low sequence, wherein a high/low transition is used as a synchronizing event for said slave nodes.

14. The method of claim 12, wherein a first valid reception of said event indication signal by one of said slave nodes is used for synchronizing said slave nodes.

15. The method of claim 4, wherein said trigger signal is generated in said master node.

16. The method of claim 4, wherein said trigger signal is applied to said master node from a unit external to said master node.

17. The method of claim 4, wherein said communication cycle comprises a static segment with time slots of a predefined size and in a predefined order.

18. The method of claim 4, wherein said communication cycle comprises a dynamic segment with time slots for transmitting a variable number of frames of variable length and variable order.

19. A computer program for execution on at least one of a computer and a microprocessor, wherein the computer program is programmed to execute the method of claim 1.

20. The computer program of claim 19, wherein the computer program is stored in one of a read-only-memory (ROM), a random-access-memory (RAM), and a flash-memory.

21. One of a number of nodes of a communication system, the nodes being connected to a communication media for transmitting data among the nodes, the data being transmitted across the communication media within communication cycles each communication cycle comprising a number of time slots assigned to one or more nodes of the communication system, said node comprising:

    means for receiving an event; and
    means for initiating a communication cycle upon receipt of said event.

22. The node of claim 21, wherein said event receiving means accommodate a predefined trigger signal, wherein said means for initiating said communication cycle initiate said communication cycle upon receipt of said trigger signal.

23. The node of claim 22, wherein the node comprises means for internally generating said trigger signal.

24. The node of claim 22, wherein the node comprises input means for receiving said trigger signal from a unit external to the node.

25.   The node of claim 21, wherein the node comprises means for executing the method of claim 1.

26.   A communication system comprising:

        a communication media; and

        nodes connected to said communication media, wherein data is transmitted among said nodes across said communication media within communication cycles, each communication cycle comprising a number of time slots assigned to one or more nodes of the communication system, wherein said nodes comprise means for receiving an external or an internal event and means for initiating said communication cycle upon receipt of said external or internal event.

27.   The communication system of claim 26, wherein the communication system comprises means for executing the method of claim 4.